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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,021	01/20/2004	Sankar Sambasivan	6456-DIV	1883

22922 7590 06/01/2005

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EXAMINER

SONG, MATTHEW J

ART UNIT	PAPER NUMBER
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1722

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/761,021

Applicant(s)

SAMBASIVAN ET AL.

Examiner

Matthew J. Song

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12 and 14-19 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/22/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12 and 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawasaki et al (US 5,418,081).

Kawasaki et al discloses a ceramic film having a perovskite type oxide is plasma melt sprayed on a substrate, this reads on applicant's ceramic material having a layered crystalline morphology and orientation because perovskites inherently have a layered structure of a metal oxide and another plane of a different metal oxide. Kawasaki et al also discloses a powder, which has come to have a desired crystalline phase after heat-treating the melt sprayed film (col 2, ln 1-68). Kawasaki et al also discloses heating treating melt sprayed films at least at a temperature to obtain an effectively improved conductivity (col 5, ln 35-68).

Referring to claim 14, Kawasaki et al discloses heat treating, this reads on applicant's annealing.

3. Claims 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Steiner ("Thermal Expansion and Compressibility of Layered Perovskite Compounds" from IDS).

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In a method of examining the properties of layered perovskites, note entire reference, Steiner discloses a  $\text{KCa}_2\text{Nb}_3\text{O}_{10}$  layered perovskite.  $\text{KCa}_2\text{Nb}_3\text{O}_{10}$  reads on applicant's anisotropic crystalline ceramic material comprising a plurality of layered basal planes and having a first crystallographic texture because Applicant's disclose using  $\text{KCa}_2\text{Nb}_3\text{O}_{10}$ , note claim 17. Steiner also discloses a high temperature diffraction experiment conducted at  $50^\circ\text{C}$  to  $600^\circ\text{C}$  at  $50^\circ\text{C}$  intervals and the surface of the sample looked rougher after the second run than at the beginning and resulted in a change in lattice parameters (pg 9-14), this reads on applicant's treating the ceramic to provide a second crystallographic texture.

Referring to claim 18-19, Steiner discloses heating to  $600^\circ\text{C}$ , this reads on applicant's annealing and the ceramic is thermally stressed.

#### ***Allowable Subject Matter***

4. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art is Kawasaki et al (US 5,418,081). Kawasaki et al teaches heat treating a plasma sprayed perovskite to effect the thermal conductivity and crystallinity of the film. Kawasaki et al does not teach or suggest  $\text{BaNd}_2\text{Ti}_3\text{O}_{10}$ .

#### ***Conclusion***

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6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

McKee et al (US 5,830,270) teaches a perovskite having a  $ABO_3$  structure with planes of AO and  $BO_2$  (col 2, ln 1-67).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Song whose telephone number is 571-272-1468. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on 571-272-1137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJS  
May 26, 2005

Matthew J Song  
Examiner  
Art Unit 1722



**ROBERT KUNEMUND**  
**PRIMARY EXAMINER**